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Conference Abstract

Semantic Annotations of Text and Images in Morph·D·Base

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Abstract

Creating an application for recording and documenting morphological data in a semantically transparent and reproducible way used to be a challenging task due to the heterogeneous nature of data within this domain. To provide a system for morphologists and taxonomists to work with their research data, collaborate and publish it, we built a Web-based semantic content management system for creating formalized morphological descriptions that are stored in a Linked Open Data ready tuple store. The application is completely controlled by a set of application ontologies that define the user interface, input and data views as well as database workflows, access rights, etc. Domain experts can create their own instance of the content management system that is tailored to their special needs by altering or extending the existing application ontologies.

Especially in a collaborative context annotations have become an essential instrument. Currently we are extending the application ontologies to permit annotations within Morph·D·Base. The present data model allows annotations to be added to most of the user generated data. For a first prove of concept we focus on two annotation tools: 1) we implemented the NCBO BioPortal REST-api to access more than 500 ontologies from the life science domain for automatic annotation of free-text provided by the user. Recognized terms are marked and the user gets to choose the desired definition of terms within the

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user's text. 2) we implement a tool for image annotation, which enables the user to draw on arbitrary image material (including high-resolution images) to mark regions of interest. These annotations are stored as complementary graphs to the original data in separate named graphs. Alternative forms of annotation will follow, once the basic annotation system is fully implemented and approved by the users.

Keywords

ontology, semantic annotation, content management system, Linked Open Data

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